

Magnitude

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- In science, a **magnitude** is the numerical size of something: see orders of magnitude.
- In mathematics, the **magnitude** of an object is a non-negative real number associated with that object.
- In physics, the **magnitude of a vector** is a scalar in the physical sense, i.e. a physical quantity independent of the coordinate system, expressed as the product of a numerical value and a physical unit, not just a number.
- In astronomy, **magnitude** refers to the logarithmic measure of the brightness of an object, measured in a specific wavelength or passband, usually in optical or near-infrared wavelengths. Two specific types of magnitudes distinguished by astronomers are **apparent magnitude** and **absolute magnitude**.
- In seismology, the **magnitude** is a logarithmic measure of the energy released during an earthquake. See Richter scale and moment magnitude scale.

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Category: Disambiguation

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Orders of magnitude (frequency)

From Wikipedia, the free encyclopedia

To help compare different orders of magnitude, the following list describes various frequencies.

Contents

- 1 Examples
 - 1.1 Lower frequencies
 - 1.2 Radio spectrum
- 2 See also

Examples

- 0.25 Hz, approximate frequency of an adult human's resting breathing rate
- 1 Hz, approximate frequency of an adult human's resting heart beat
- 10 Hz, cyclic rate of a typical automobile engine at idle (equivalent to 600 rpm)
- 50 Hz or 60 Hz (50 Hz for European AC, Tokyo AC or 60 Hz for American AC, Osaka AC), electromagnetic — standard AC mains power
- 20 Hz to ~16 kHz, acoustic — normal range of adult human hearing (most children and some animals perceive sounds outside this range)
- 100 Hz, cyclic rate of a typical automobile engine at redline (equivalent to 6000 rpm)
- 261.626 Hz, acoustic — the musical note middle C
- 440 Hz, acoustic — concert pitch (A above middle C), used for tuning musical instruments
- 530 kHz to 1.710 MHz, electromagnetic — AM radio broadcasts
- 740 kHz, transitions — the clock speed of the world's first commercial microprocessor, the Intel 4004 (1971)
- 1 MHz to 8 MHz, transitions — clock speeds of early home/personal computers (mid-1970s to mid-1980s)
- 42 MHz to 260 MHz, electromagnetic — VHF terrestrial TV broadcast channels
- 88 MHz to 108 MHz, electromagnetic — FM radio broadcasts
- 1420 MHz, the frequency of the hyperfine transition of hydrogen, the most common element in the universe.
- 3.80 GHz, transitions — highest clock speed Pentium 4 "Prescott" microprocessor (2005)
- 428 THz to 750 THz, electromagnetic — visible light, from red to violet
- 30 PHz, electromagnetic — x-rays
- 300 EHz and above - gamma rays

Orders of magnitude

area
currency
data
density
energy
frequency
length
mass
numbers
power
pressure
specific heat capacity
speed
temperature
time
volume
Conversion of units
physical unit
SI
SI base unit
SI derived unit
SI prefix
Planck units

Lower frequencies

- Once per minute (one rpm): about 16.667 mHz
- Hourly: about 277.8 μ Hz
- Daily: about 11.57 μ Hz
- Weekly: about 1.653 μ Hz
- Monthly (on average): about 380.5 nHz
- Yearly: about 31.71 nHz
- Once per decade: about 3.171 nHz

- Once per generation: about 1 nHz
- Once per century: about 317.1 pHz
- Once per millennium: about 31.71 pHz

Radio spectrum

Radio spectrum										
ELF	SLF	ULF	VLF	LF	MF	HF	VHF	UHF	SHF	EHF
3 Hz	30 Hz	300 Hz	3 kHz	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz	3 GHz	30 GHz
30 Hz	300 Hz	3 kHz	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz	3 GHz	30 GHz	300 GH

See also

- Hertz

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Category: Orders of magnitude

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